

October/November

PANORAMA

AR21

COVER:

NORANDA MINERALS INC.

NORANDA'S LONDON OFFICE

PROJECT N

SPECIAL SUPPLEMENT:
QUARTER CENTURY CLUB

"WHY SHOULD A GOOD GEOLOGY BORDER?" ED HC

His search for the answer led him to the fire-ravaged wilderness of western Quebec, armed only with faith and a \$225 grubstake.

Of all the lonely and troubled occupations of man, prospector Edmund Horne could hardly have chosen one filled with more heartbreak and disappointment. His life story might well have been written in Hollywood. But no Hollywood writer, lolling in the shade of a Beverly Hills pool, would dream of packing his script with so many improbable situations. Horne's *real* life story sounds like so much fictive exaggeration, and it goes something like this:

The hero is a hawk-faced, trail-toughened prospector. He's been infected with gold fever since he was a young lad in Enfield, Nova Scotia. He prospects in Colorado, in the muskeg country of Labrador and in the Canadian Rockies. Now, as we pick him up, he is haunting the streets of New Liskeard during World War I, looking for a grubstake. He's already made several trips into western Quebec and he's convinced that's where the next big gold stakes will be won.

To everyone he meets, his story is the same; "It doesn't seem logical that all that good geology should end at the Ontario border just because somebody has drawn an imaginary boundary line."

Money is short and people aren't interested in backing a wildcat prospecting trip; Quebec is too isolated, they say. Then, in 1920, just as he is about to give up, he rounds up twelve men in the back

room of the Grand Union Hotel and hammers out an agreement. They sign a handful of cheques totalling just \$225. With this meagre grubstake he starts another expedition, beaching his canoe finally on the shores of Lake Osisko. Results of his geological work are encouraging and he stakes 70 acres. The following year he is back, staking another 160 acres and bringing back samples. But on the wharf at Haileybury, his gear accidentally goes overboard: his samples lie in 20 feet of water and Lake Temiskaming is due to freeze over almost any night.

Day after day he grapples from the wharf, returning to his hotel room each night discouraged. Then, on the sixth day, his packsack breaks surface on the prongs of the grapple. The samples kick back with assays of \$30 a ton and fire the first boom into the Rouyn back country.

The men who put up the original \$225 grubstake sell out to a syndicate who develop the prospect. It turns out to be a supermine—the Horne—and Noranda was born.

A Hollywood ending, perhaps, but that's exactly how it happened.

Len Marquis is the Director of Corporate Communications for Noranda Inc. and the founding Editor of Panorama.



ALL THE
END AT THE
RNE ASKED.



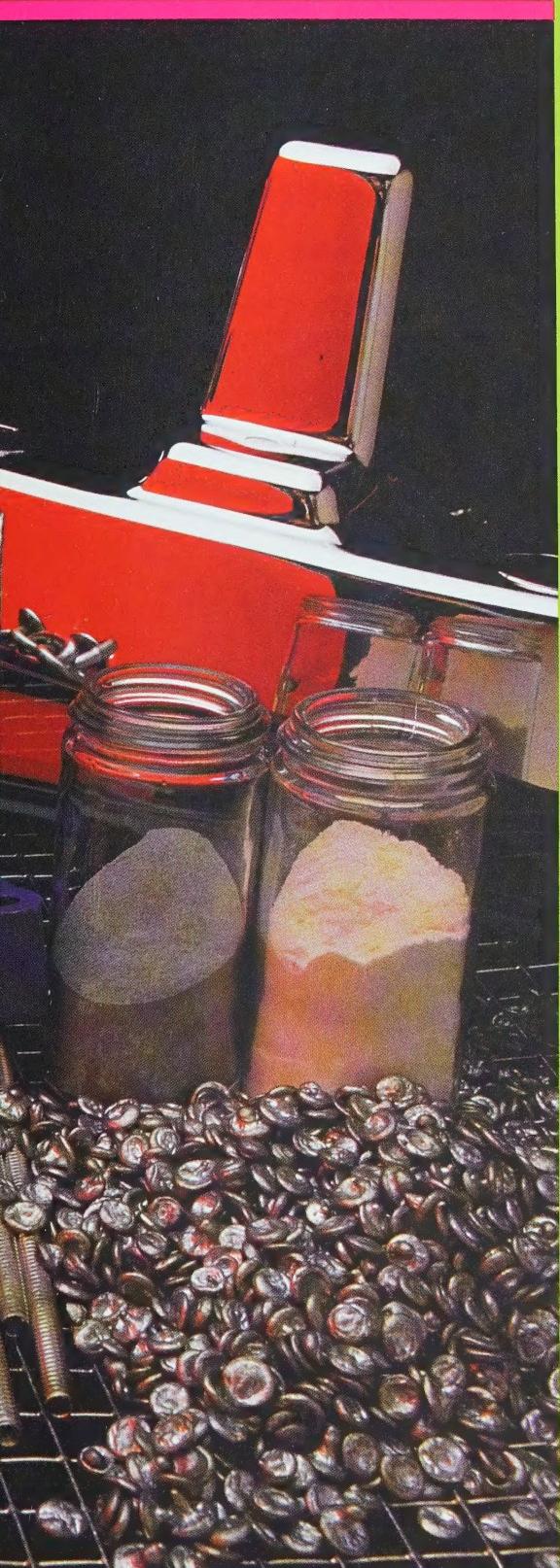
N O R A N D A M



"We have to know the market so well that we anticipate changes before the customer does," states Keith Hendrick, President of Noranda Minerals Inc. Canadian Electrolytic Zinc Limited, in Valleyfield, Quebec, keeps abreast of the customer needs. Seen here are some of the zinc and the end-use products of this company.

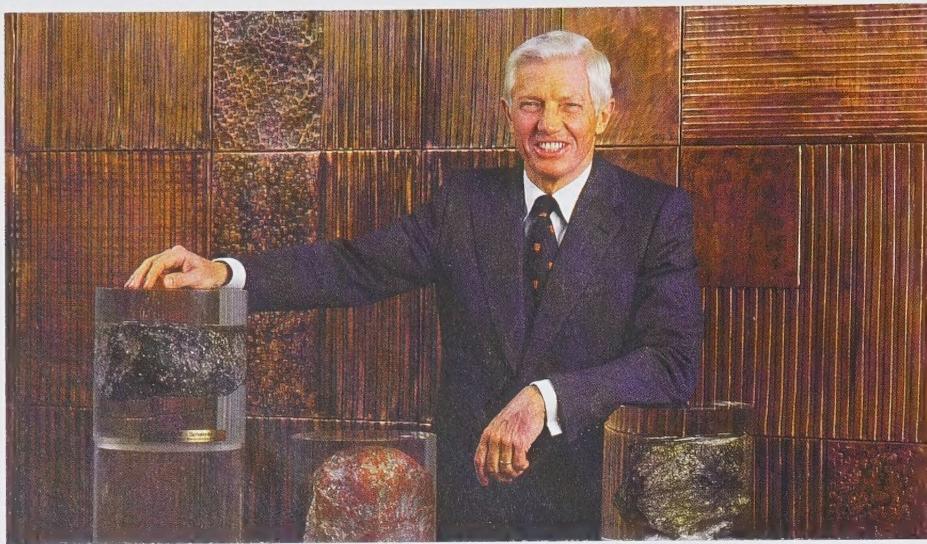
N E R A

L S I N C.



A VISION FOR THE FUTURE

Ralph Waldo Emerson once defined vision as "a waking dream". The foundation of Noranda Minerals Inc. was built on the dreams of early 20th century prospectors. Although many things have changed, having a dream for the future will always be the cornerstone of successful companies: hence, a vision and mission statement for Noranda Minerals Inc.



Keith Hendrick, President of Noranda Minerals Inc., feels the vision and mission statement will bind the organization together. "We're building a new spirit, a new sense of purpose within the organization."

Noranda Minerals Inc. inherited the respect and strong traditions of the original parent company—Noranda Mines Limited. Although many changes have taken place since Ed Horne first discovered the Horebody in Rouyn-Noranda, Quebec, the pride of the minerals operations still remain strong.

THE VISION

Noranda Minerals will be the finest and most respected minerals and metals company, responsive and sensitive to employees, customers, communities and environment, while providing a superior return to shareholders. The company will grow by innovating, creating and seizing opportunities and adapting to change.

The senior management of the company, referring to themselves lightheartedly as the "Silver Seven" (although not all have silver locks), held a meeting in December, 1986, to define what the company's vision and mission statement would be. "It's really a glue," explains Keith Hendrick, President of Noranda Minerals Inc., "a common thrust that will bind everyone together to which everyone can relate and which creates a feeling of association of family among us."



MISSION STATEMENT: LEADERSHIP

Leadership by example is a priority at all levels, to be fostered by a strong, cohesive management team dedicated to involving employees in setting clear goals and maintaining high professional standards.

The group of seven is the senior management team: Keith Hendrick, President; Bill Allan, Vice President—Technical Services; Alex Balogh, President—Noranda Copper; Bill Deeks,

President of Noranda Sales Corporation Ltd.; André Fortier, Vice President—Employee Relations; John Gordon, President—Mining Corporation; John White, President—Noranda Zinc. Recently, David Bumstead joined the senior management team as Vice President of Finance & Planning. Although it may seem, on surface, an easy document to prepare, the management team had much to consider, not the least of which was the responsibility to respect the traditions of the company.

Noranda Minerals Inc. inherited the strong traditions of the original company, Noranda Mines Limited, as well as the pride and respect that is associated with Noranda's mining operations. The management team wanted to ensure that

this continued, and yet set the stage for the future. "We wanted to identify what we thought was important in character, and establish common values--high values," says Hendrick. "We knew we were probably setting up a vision that was, certainly in the near term, not attainable, but something for which we could reach and strive for. We want to communicate this to our employees and have them all working in this direction."

PEOPLE

All of us, as employees, will participate in the management process. We are knowledgeable about our business and committed to achieving common goals, providing feedback, and rewarding and recognizing individuals for achievement. We will strive for a safe work environment in which training, development and challenge are aimed at improving competitiveness and resulting in secure jobs.

Hendrick has been busy this year visiting as many properties as possible, and talking with as many employees as he can about the vision and mission statement. "If you look at it, it reads a little like 'motherhood'; I guess it is 'motherhood', but it's not a bad thing. We mean what we say," states Hendrick. He is the first to admit that some people are skeptical about all this, but the management team intends to "practice what they preach".

Already programs are being implemented, some new, some revived, to support what is outlined in the mission. For example, the ECAP (Executive Committee on Accident Prevention) visits, which originally included senior personnel from the various divisions of Noranda Group operations, is being adapted for Noranda Minerals Inc. Getting employees to think "safety" ranks high on Hendrick's list of priorities. He wants it to be a priority of all employees throughout the organization, starting with himself.

In a recent visit to Brunswick Mining and Smelting Corporation Limited's Mining Division, Hendrick relates, "One of the most impressive things that I've seen was at Brunswick, when I met one of the mine rescue teams. I had the clear feeling

after that if I was ever in difficulty in a mine, I'd want those fellows to come and get me because they were knowledgeable and keen. They knew what they were doing and you knew they were capable of doing everything possible."

The vision and mission statement of Noranda Minerals Inc. was written to establish common values for the organization. Part of the mission statement reads: "We are knowledgeable about our business and committed to achieving common goals, providing feedback, and rewarding and recognizing individuals for achievement."

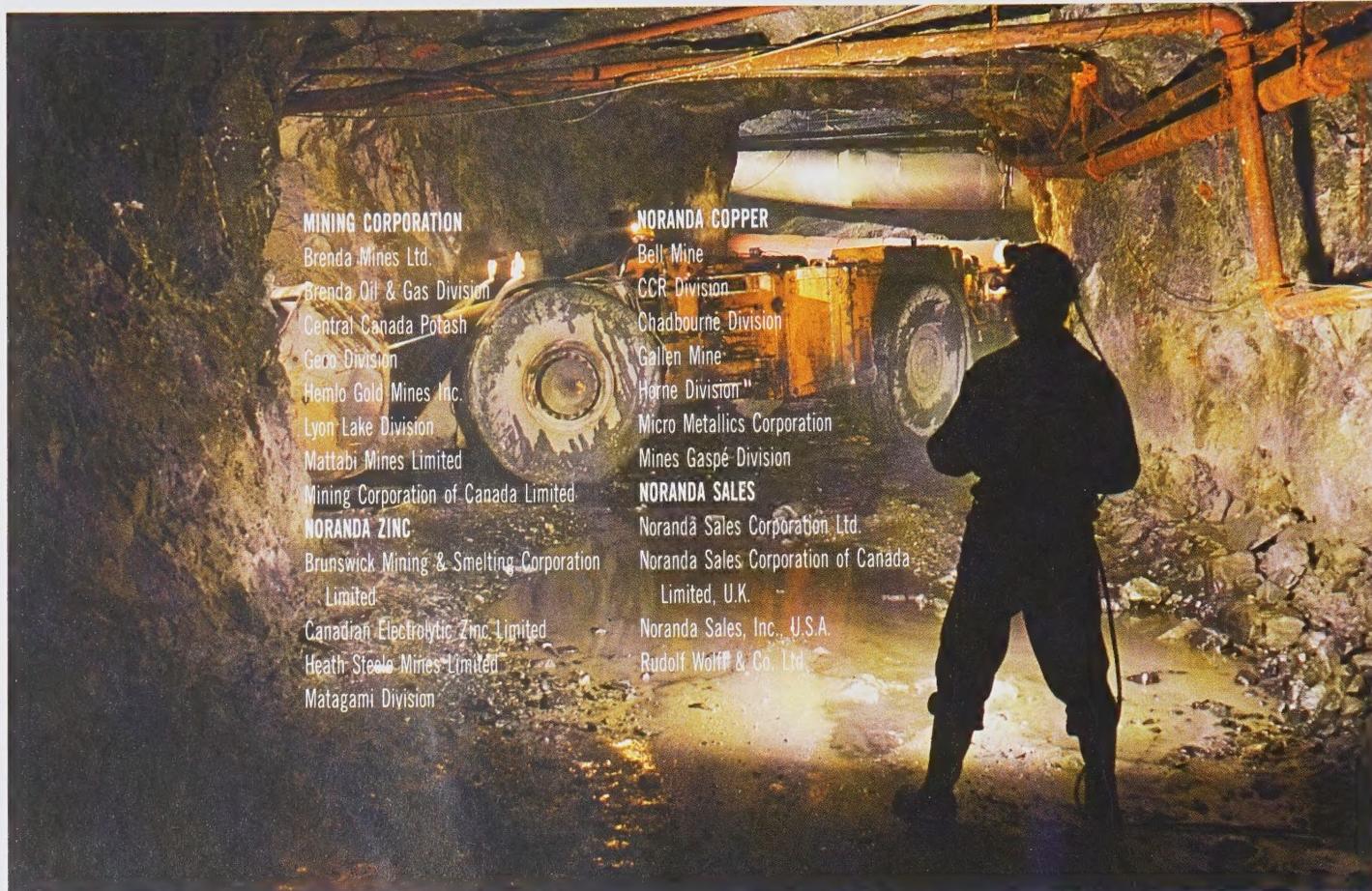


CUSTOMERS

Customers will be listened to and served with high quality products at competitive prices, excellent service and on-time delivery. We will be attentive to changes in the marketplace and to customer needs, responding promptly and providing technical support, product research and market development.

Obviously, without the customers, Noranda Minerals Inc. wouldn't be in business. So the company is emphasizing research, market development, just-in-time delivery and statistical process control. "We have to know the market so well that we anticipate changes before the

customer does, and be ready to serve him with the right product when he does want it," states Hendrick, himself a veteran of Noranda Sales Corporation Ltd. The company plans to institute customer visits, similar to the ECAP visits, to stress the importance of achieving their mission to both the customers and employees.



MINING CORPORATION

Brenda Mines Ltd.
Brenda Oil & Gas Division
Central Canada Potash
Geo Division
Hemlo Gold Mines Inc.
Lyon Lake Division
Mattabi Mines Limited
Mining Corporation of Canada Limited

NORANDA ZINC

Brunswick Mining & Smelting Corporation
Limited
Canadian Electrolytic Zinc Limited
Heath Steele Mines Limited
Matagami Division

NORANDA COPPER

Bell Mine
CCR Division
Chadbourne Division
Gallen Mine
Horne Division¹
Micro Metallics Corporation
Mines Gaspé Division

NORANDA SALES

Noranda Sales Corporation Ltd.
Noranda Sales Corporation of Canada
Limited, U.K.
Noranda Sales, Inc., U.S.A.
Rudolf Wolff & Co. Ltd.

OPERATIONS

Operations will be competitive, state-of-the-art facilities, responsive to the changing business environment, technologically innovative, quick to seek out new opportunities for growth and committed to research and development. We will act responsibly toward the environment and be responsive to employees, their representatives and the community. An active mineral exploration and acquisition program will be supported to increase ore reserves.

There are four divisions within Noranda Minerals Inc.: Noranda Zinc, Noranda Copper, Mining Corporation and Noranda Sales Corporation Ltd. Recently, all of the divisions have been enjoying the rise in non-ferrous metal prices. And the topic of taking one of these divisions public, or Noranda Minerals Inc. itself public, has been brought up for discussion. But prices will have to remain high, for an extended period, and Noranda Minerals will have to have a positive track record of profit-

Because this is such a competitive industry, during the past several years, many North American mines have closed. But the operating properties within Noranda Minerals Inc. are competitive and effective, and ready to face future challenges.

ability before the company can consider this move. "We're just beginning to demonstrate a capability of producing profits that we did five or ten years ago," states Hendrick. "Certainly our second quarter was very good."

In 1986, Noranda Minerals' results were affected by three major strikes: at the CCR Division, the Horne Division and Canadian Electrolytic Zinc. However, now that the contract negotiations have been settled, and market prices are improving, things are looking up for the company. "A major part of it is due to the extreme effort everyone has put into reducing costs and increasing productivity, partly by introducing variable compensation, which gave people additional incentive at a time when the company wasn't making a lot of money."

Noranda Minerals has gone through a lot of belt tightening over the past several years. They now have a complement of approximately 8,500 employees, down from 17,000 six years ago. Several mines have closed, but the company is now left with competitive, effective mines. But it's not all smooth sailing ahead.

The company is facing a very serious situation. "One of our challenges for the future is replacing some of the mines that are going to fade out in the next two to four years," says Hendrick.

Noranda Minerals works closely with Noranda Exploration Company Limited. Two exploration projects are now in the process of being developed for the Minerals group. "We have the Isle Dieu property to replace Mattagami, at least for a period, and we're bringing on Silidor which is a gold flux near Noranda (Quebec) which will replace the Chadbourne," says Hendrick.

Perhaps even more important, and certainly related, is the need to keep a secure supply of feed going to the metallurgical facilities: Canadian Electrolytic Zinc Limited, the CCR Division, the Horne Division and Brunswick Mining

and Smelting Corporation Limited-Smelting Division. "The core of Noranda Minerals is obviously its metallurgical facilities. They really are world competitive," states Hendrick. The importance of secondary sources is evidenced by the fact the copper metallurgical facilities smelt and refine about twice as much ore from outside sources as they do from Noranda Minerals' own production. "A great deal of ingenuity and imagination have been demonstrated in maintaining this feed. We're bringing in material from all over the world: Poland, Chile, India," states Hendrick.

Ideally, the metallurgical facilities, such as the CEZinc refinery, get their basic materials from Noranda Minerals' core mining operations, or in combination with purchases from other Canadian companies.

COMMITMENT

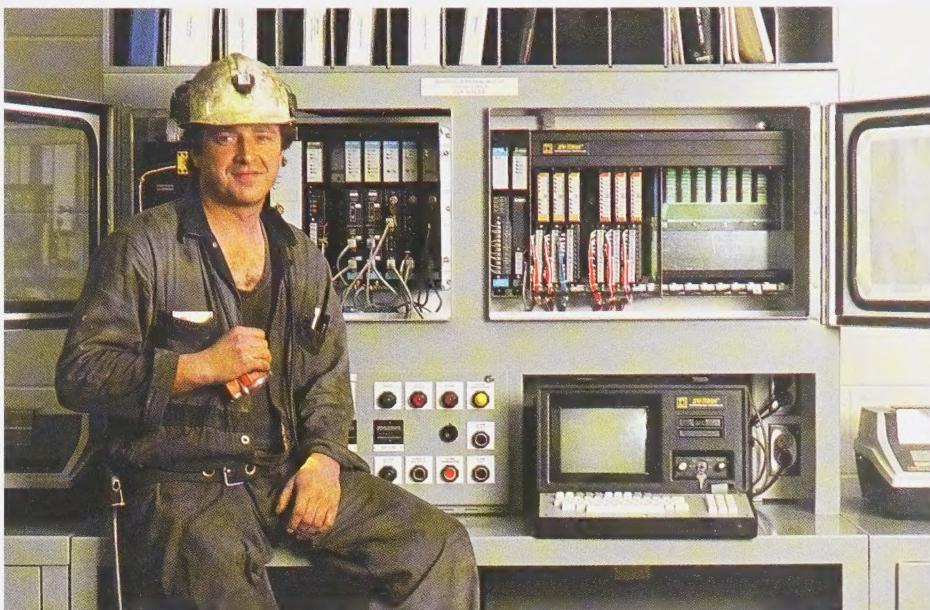
Each of us is dedicated to making Noranda Minerals the finest mineral and metal company, pursuing excellence in all areas. We are committed to this vision and will pursue opportunities beneficial to our stakeholders. We want an enterprise in which all of us--employees, customers, shareholders and the community--will have pride.

Noranda Minerals Inc. is making progress in making an identity for themselves as a division of Noranda Inc. "I think we're building a new spirit, a new sense of purpose within the organization. It's from this sort of thing that ultimate results will come no matter what the external circumstances," states Hendrick. "We can't do much about the external circumstances, that's one thing I've learned over the years."

Although metal prices are rising, by historical standards, they are not high at all. "What has happened in the past five years is the industry has achieved balance in production and it has at the same time absorbed or delivered the surplus that was overhanging the market," states Hendrick. But after the past five years of depressed prices, and the closure of many operations within the minerals

Hemlo Gold Mines Inc., a public company, is an example of how participative management keeps this operation the lowest cost gold producer in

Canada. The mission statement for Noranda Minerals Inc. reads, in part: "All of us, as employees, will participate in the management process."



One of the major challenges for the company is replacing mines whose orebodies will be depleted in the next few years. Several projects from Noranda Exploration Company Limited are filling that need.

community, Noranda Minerals Inc. is facing a positive future in this very competitive industry. It is a company that has a vision and a mission, and the acumen to achieve both.

Seen here is diamond drilling on a zinc-lead-silver property on the Hermitage Peninsula of Newfoundland's south coast.

London



NORANDA'S LONDON OFFICE THE NEWEST MEMBER OF THE QUARTER CENTURY CLUB.

1987 is a banner year for the Noranda Sales Corporation of Canada Limited's (NSCC) London, U.K. office. It was 25 years ago that Keith Hendrick (now President of Noranda Minerals Inc.) opened the first London office on Stratton Street, a stone's throw from New Zealand House, where the office has been located since 1963.

The current office, according to Managing Director, Malcolm Sivers, employs 23 staff, of which 20 are United Kingdom based and three are on assignment from Toronto.

Responsible for the sales and marketing of Noranda Minerals base metals and minerals in the important and highly competitive markets of East and West Europe, Africa and the Middle East, the current activities involve sales of about 25 principal products (including copper, zinc, lead, molybdenum, fluorspar, alumina, refinery by-products) in approximately 30 countries, ranging from Portugal to Poland, Italy to Israel, and Switzerland to Saudi Arabia.



In a highly complex and competitive market, the London staff is ready to meet the challenges of the coming years. Seen here from left are: Jeremy Pearce, Ian Anderson, Pat Weller, Malcolm Sivers, Fred Wyard and Ian Robertson.

Daily customer contact with such a diversified range of countries and cultures necessitates important linguistic skills. The London office staff have capabilities in English, French, German, Spanish, Italian, Russian and Arabic. All of these skills are necessary to effectively sell Noranda's products and maximize the financial return to the producing locations.



The current office employs 23 staff, of which 20 are United Kingdom based and three are on assignment from Toronto.

In addition to the critical direct sales and marketing function, NSCC also owns the Rudolf Wolff Group, one of the largest and most prestigious metal brokerage companies operating on the London Metals Exchange, which gives Noranda a vital "window" on this important terminal market area.

The London office staff also represents Noranda Group interests in a number of important industrial organizations such as the Councils of the Copper/Zinc/Lead Development Associations, The World Bureau of Metal Statistics and International committees of the Business and Industry Advisory Council (BIAC), to the Organization for Economic Cooperation and Development (OECD).

There are three main departments in the office:

--The Molybdenum/Fluorspar/Alumina Department which is headed by Patrick Weller, Director and includes Tim Outeridge, Manager-Fluorspar and Moly sales in Germany; David Cook, Assistant Manager; Anne Beard, Senior Administrator; Paul Adams, Marketing Executive; Noellie de Casterle, Administrative Assistant; and Carol Taylor, Secretary.

--The Zinc/Lead/By-Products Group falls under Ian Robertson, Director (and a Noranda Quarter Century Club member). He is ably assisted by the newly-transferred Andy Falls, By-Products Marketing Executive; Susan Scott, Senior Administrator; Tanya Dutfield, Administrative Assistant; Jane Lloyd,

Shipping Manager; Lucinda Goodrich, Administrative Assistant; and, Corinne Elbaz, Administrative and Marketing Assistant make up the balance of the staff in this department.

--Jeremy Pearce is Head of Finance and Administration and his team includes Fred Wyard, Chief Accountant and Company Secretary; Peter Jones, Management Accountant; Jackie Pfister, Accounting Assistant; Triumphant Oghre, Treasury Accountant; and, Penny Flanagan, Data Processing Manager.

Lynn Kyndt, Secretary to the Managing Director completes the London team.

Ian Anderson, a 24-year-employee of the London office, remains the Financial Director and is located at the office of Rudolf Wolff in his broader capacity of Chief Financial Officer for Noranda in the U.K.

Sivers states, "The market place out there is highly complex and competitive. In the London office, as elsewhere in Noranda Sales, we have a high pursuit of



Noranda Sales Corporation of Canada Limited works in the highly competitive markets of East and West Europe, Africa and the Middle East. Within the London staff are employees who can speak one or more of the following languages: English, French, German, Spanish, Italian, Russian and Arabic.

excellence in all aspects of our sales and marketing activities. We know that we are a key part of the Noranda Minerals team, and spare no effort to improve our competitive position and enhance the financial benefit to the company and its shareholders. We hope that the London office's next quarter century sees the whole Group continuing to grow and prosper."

Project "N"

Windows are just about the most important part of a building enclosure as they separate us from the weather while serving our psychophysical needs for light, space, air, nature, etcetera. One of Noranda Inc's companies, Norandex Inc., manufactures residential aluminum framed windows in Cleveland, Ohio, and markets them along with a complete line of contractor building supplies through the Northeastern United States.

Painted aluminum is an excellent frame material as it is maintenance free, durable, rugged, light, relatively inexpensive and easy to fabricate. Aluminum, however, is an excellent heat conductor which is not a desirable frame property. Heat losses occur year round along with condensation of room humidity on the cold interior frames in winter. The aluminum industry has countered this problem by offering thermalized frames where a low conductivity material, such as wood or plastic, separates the aluminum in contact with the outdoors from the indoor frame.

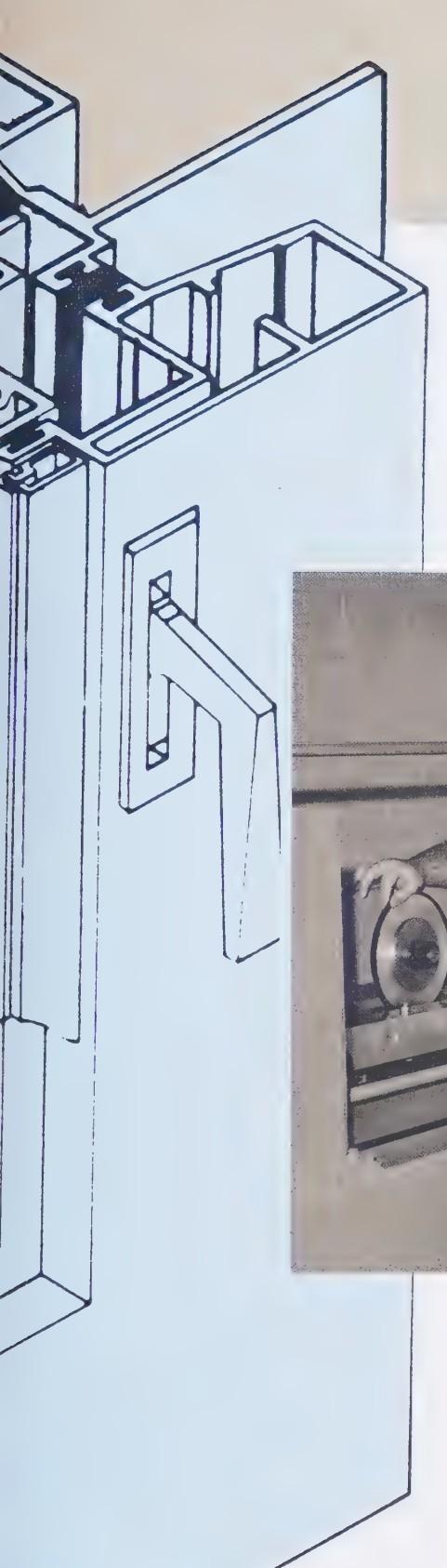
Norandex originally extruded an interior frame profile, an exterior frame profile and a PVC (polyvinyl-chloride) plastic profile and assembled them to produce a thermalized frame. Later, to improve quality and lower labour costs, Norandex and most of the industry, changed to a one piece aluminum extrusion containing a central U-shaped cavity that was filled with liquid polyurethane plastic. Then, after the plastic cured to a solid, the aluminum bottom of the cavity was sawed away, or "debrided", to produce the required aluminum-plastic-aluminum frame.

Norandex requested the Noranda Research Centre to find a way to further reduce labour costs by changing the two-stage profile thermalization process, namely filling and debridging, into a one-stage process. It was soon realized that if

a thermoplastic material (plastic that softens with heat), such as the previously used PVC, could be directly extruded into the U channel of the aluminum profile, filling and debridging could be combined. This is because the molten plastic hardens very quickly as the aluminum conducts away the heat, unlike the chemical reaction required to convert liquid plastic to solid. A further benefit of this concept was that thermoplastic materials are less expensive than liquid thermoset materials.

An initial crude profile filling trial, performed in 1981 at our Canstar Communications fibre optic plant, then in the town of Mount Royal, Quebec, showed that the directly extruded thermal barrier concept had great potential. Norandex liked this approach and further funded its development at the Research Centre.





From left: Jean-Claude Viens, Larry Smyth, Eduardo del Ricon and Edward Williams are the major contributors to Project N.



The directly extruded process offered a potential saving of \$500,000 per year.

Rather than turn the well-defined process requirements over to an outside firm, the Noranda Research Centre decided to keep the interesting part of developing the commercial production line for themselves. The production line was designed as a filling line and a debridging line, spaced apart by a conveyor on which the filled profiles air cool. The profiles are transferred from the filling line to the cooling conveyor and from the conveyor to the debridging line by specialized robots. All the equipment for this computer controlled production line was designed in-house. The major components were fabricated by outside contractors with final assembly and refinements

performed by staff in an industrial building in Dorval, Quebec. The filling portion of the line was installed and commissioned in Cleveland with no problems at all. The debridging line and cooling conveyor are finished and are presently at the Research Centre where work on the transfer robots is progressing. Former employees directly involved in this project include Phat Nguyen, Agop Gurunlu, Gerry Couture and John Temesi. Less directly involved, but still key players in an undertaking such as this, are employees in the purchasing, machine shop, and maintenance department, and the product engineering division.

-Courtesy of Centre nous, Spring, 1987

People in Events

THE EMPLOYEE CAMPAIGN CHAIR-

persons and the employees of the Noranda Group, Montreal area, have demonstrated, for another year, their great concern for Centraide Montreal.

It is with outstanding cooperation that Noranda Metal Industries Ltd., and the sales office of Canada Wire and Cable Ltd., earned a gold certificate; the Noranda Research Centre a silver certificate; CCR-Division a bronze certificate; Wire Rope Industries Ltd., a bronze certificate; and, Canada Wire and Cable Ltd., Montreal plant, a bronze certificate.

The total contributions rose to \$62,000 and Mr. Yves Legris, Vice-President-Human Resources, Noranda Manufacturing Inc., was among the ten finalists for the "Award of Excellence" for best campaign chairperson.

Mr. Gilles Séenacal and Mrs. Ginette Riopet, both representing the employees of the sales office of Canada Wire and Cable Ltd., are presented with a gold certificate.



From left: Mr. Jean Dumoulin, Operator, and Mrs. Audrey Gratton, Internal Sales Representative, both representing the employees of Wire Rope Industries Ltd., are presented with a bronze certificate by Mr. Jean Lessard, President and General Director of Centraide Montreal.



Mr. Patrice Mercier, President of the Union, representing the employees of Noranda Metal Industries, is presented with a gold certificate.



Mr. Léo Dagenais, representing the Noranda Research Centre employees, is presented with a bronze certificate.

People in Events

A SPART OF ITS 'YEAR OF THE ENVIRONMENT'

ment', Canadian Electrolytic Zinc Limited, Valleyfield, Quebec, invited Clifford Lincoln, Quebec Minister of the Environment, to officially inaugurate its new booth at the Valleyfield Industrial and Commercial Exhibition.

The Valleyfield Industrial and Commercial Exhibition is now in its ninth year. Organized by the Salaberry-de-Valleyfield Region Chamber of Commerce, it attracts over 16,000 visitors each year. CEZinc has participated in this exhibition since its beginning, together with companies, large and small. Entertainment, special events and an outdoor carnival added to the weekend show.

At the entrance to Canadian Electrolytic Zinc Limited, from left: Serge Marcil, Member of the National Assembly, Philippe Krick, Technical Superintendent at CEZinc, Clifford Lincoln, the Quebec Minister of the Environment, David D. Rodier, Plant Manager of CEZinc, John White, President of Noranda Zinc Group and Mark R. Toivanen, Vice-President and General Manager of CEZinc.



1986 AWARD FOR THE

"Most Improved Performance" was presented to the personnel at Wire Rope Industries' Dartmouth (Nova Scotia) Service Centre. This award is presented annually to the facility demonstrating the most improved safety record in the Noranda Manufacturing Montreal Group.

First row from left: J. R. Naud, R. Shillington and R. L. Henry, Chairman, President and Chief Executive Officer of Wire Rope Industries Ltd. Second row from left: D. Meisner, T. Beaton, M. Woodward, F. Harnish and F. Robinson.

Third row from left: E. Walsh, K. Allen, P. Lapierre and M. Snook.



JAMES MACLAREN INDUSTRIES INC.'S Newsprint Division, in Masson, Quebec, held an inauguration of its wastewater effluent clarifier on June 19, 1987. At the beginning of 1987, the company commissioned an effluent treatment system designed to eliminate, to the greatest possible extent, the suspended solids from the wastewater (effluent) created by the manufacturing process before the water is returned to the Liévre River.

The Masson newsprint mill uses a very large quantity of water—some 45,000 cubic metres (1.6 million square feet), or 10.2 million litres.

(2.25 million gallons) each day—to produce its product. Following the wood washing, pulping and papermaking operations, the majority of the originally fresh water takes the form of an effluent containing suspended particles of bark, wood chips and fibres, and paper. The Masson treatment system significantly reduces the solid content of this effluent by allowing the suspended solids to decant and form a sludge deposit at the bottom of a large holding tank.

This system is divided into four stages, namely: the wastewater feed, the clarifier, the sludge handling and finally, the sampling station.

People in Events

FOURTEEN EMPLOYEES, REPRESENTING ALL

Northwood Pulp and Timber Limited sawmills, competed at the Interior Lumber Grading Championships in Williams Lake on May 24, against employees from sawmills throughout British Columbia. Representatives of various lumber grading associations from Japan, the U.S.A. and other parts of Canada, were on hand to observe. Northwood employees did well. Stuart Sing (Houston Sawmill) took the Champion of Champions Award. In the senior championships, Machander (Mac) Randhawa (Upper Fraser Sawmill) placed second, Diljit Parmar and Chung Hung Trinh (both from Houston Sawmill) tied for third. Sajjan Minhas (Upper Fraser Sawmill) placed sixth and Joe Ferreira (Prince George Sawmill) placed tenth. In the junior championships, Rick Bowser (Houston Sawmill) placed third. In addition, Mohinder Bahia (Upper Fraser Sawmill), Tim Sutton (Prince George Sawmill), Ed Kravontka (Houston Sawmill), and Inderjit Bagri (Shelley Sawmill) were also presented with awards in recognition of their marks.

During grading classes earlier, forty-eight employees had obtained, upgraded or renewed their grading tickets, with employees competing for Northwood and Council of Forest Industry trophies.

The top three Northwood senior winners were: Jose Ferreira (Prince George Sawmill) first place with 98.8%, Sajjan Minhas (Upper Fraser Sawmill) second place with 96.7%, and Diljit Parmar

(Houston Sawmill) in third place with 95.8%. The top junior winner for Northwood was Doug Ehs (Prince George Sawmill) with 85.8%. Jose Ferreira also won the top award for C.O.F.I. (Prince George classes), and placed second overall in the C.O.F.I. standings. Other top class awards went to Diljit Parmar (Houston Sawmill), Mohinder Bahia (Upper Fraser Sawmill), and Shirley Williams (Burns Lake).

Congratulations to all participants and winners.



Jose Ferreira receives the top Northwood and C.O.F.I. awards from Dominic Gamiero, General Manager Sawmills, and Ed Dias, Manager Quality Control.



From left, Stuart Sing accepts his awards from Reg Stafford, Manager Quality Control, C.O.F.I. (Northern Sector), and Ed Dias, Manager Quality Control, Northwood.

People in Events

Wire Rope Industries' Surrey

location was presented with the Noranda Manufacturing (Montreal Group) Safety Award for the "Best Performance".

Wire Rope Industries, in Surrey, B.C., was extremely proud to receive this award for 1986 and to share the honour with Arnprior. This is the second consecutive year that the Surrey location has been successful in the area of safety, having won the award for "Most Improved" in 1985.



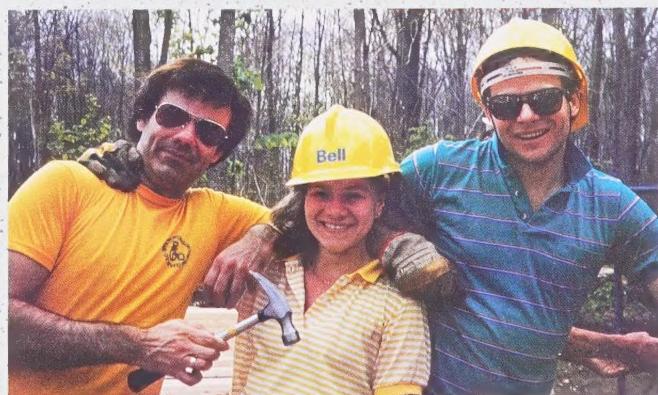
From left: Mr. R. L. Henry, Chairman, President and Chief Executive Officer of Wire Rope Industries made the presentation to J. O'Hara, Cy Bingley, T. Onno, E. Averill, G. McQueen and M. Owen of the Safety Committee.

ON THE WEEKEND OF MAY 30TH, 100

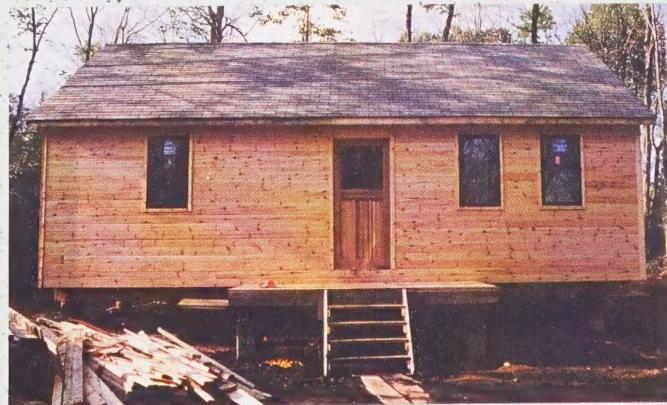
volunteers pooled their resources to build a cabin at the Boy Scout Reserve Camp near Haliburton, Ontario. This was part of an annual 'Spring Building' project of the Toronto Junior Board of Trade/Toronto Jaycees, which is an organization of young business people who donate their time and energy for various community projects. The camp was desperately in need of a cabin for a volunteer doctor but they could not afford to undertake

the construction.

Members of the Toronto Junior Board of Trade were successful in soliciting building materials, supplies, cash and food from a number of firms in the Toronto area. Steve Plumley, Manager-Financial Analysis for Noranda Forest Inc. and a member of the Junior Board of Trade, approached Noranda Forest Sales for a donation of lumber for the project. They made the largest donation, providing all the spruce lumber required for the cabin and arranged for the lumber to be shipped to Haliburton. Three years ago, Noranda Forest Sales also donated the lumber for the Junior Board of Trade's Spring Building project at a camp for mentally handicapped children near London, Ontario.



Steve Plumley, Manager-Financial Analysis for Noranda Forest Inc. (far left) is on the Board of Directors for the Toronto Junior Board of Trade. He is seen here with two other volunteers from the Toronto Junior Board of Trade, Elizabeth Boivin, Project Treasurer; and Dave Pasieka, President.



People in Events

ALL NORTHWOOD EMPLOYEES CAN BE

proud of having the best first aid team in British Columbia.

The team, comprised of Mary Hogan and Linda Lee from the Protection Office, Ellen Hogan from the Machine Room, Chris Hale from the Provincial Corrections Department and Coach Ivan Marie from Emergency Health Services, captured the Provincial First Aid Championship title in Kamloops in June.

Northwood's team entered the provincial championship after taking first place in the North Central Zone. They faced stiff competition against the winning teams from nine zones throughout British Columbia. The teams represented all sectors, including the forest and mining industries, fire and ambulance crews, as well as the service sector.

Mary, Linda, Ellen, Chris and Ivan head to England in October to participate in the International First Aid competitions. Sincere congratulations to all members of the team and every success in the challenges ahead.



From left: Chris Hale, Linda Lee, Ellen Hogan and Mary Hogan 'practicing' on Fire Chief Roger Laye.

The team was given an informal reception at the Mill to recognize their achievement. From left: Ellen Hogan, Linda Lee, Mary Hogan, Chris Hale.



TWO BRENDA MINES SUPERVISORS WERE

recognized recently by the Mining Association of British Columbia for having supervised 30,000 accident free shifts. In the case of Derek Perkins, Chief Chemist, this involved the period from August 29, 1977 to February 24, 1987. George Hopkins, Mill Electrical Foreman's 30,000 accident free shift period extended from March 6, 1973 to February 10, 1987. In all, seven supervisors at Brenda Mines have attained the 30,000 accident free shift goal, representing 1,680,000 accident free hours of work.



Receiving the award, from left: Don Miller, Safety Coordinator; Gordon Harris, Mine Manager; Derek Perkins, Chief Chemist; Ron Bradburn, Manager, Brenda Business Initiative Group; and Erich Groiss, Concentrator Superintendent.

People in Events

THE SMELTING AND FERTILIZER DIVISION of Brunswick Mining and Smelting Corporation Limited has, for the second time, won the national award for industrial energy efficiency, granted by the Canadian Electrical Association.

The 1987 Double E Award was presented jointly to Brunswick Smelting and Fertilizer of Belledune, and Sifto Salt of Pugwash, Nova Scotia. This is the first year for a shared award, and presentations were made in Ottawa on June 29 by CEA President, Wallace Read.

Fuel efficiency at the smelter was improved by 22.6 per cent in 1987, compared with 1983, resulting in a savings of \$3.6 million per year. Conversion to the hemi-hydrate process in 1986 was the chief contributor to a 51.5 per cent reduction in energy use at the fertilizer plant.

Applicants for the award are required to first enter submissions for the provincial program, and the best entrants from this group are pooled for the national award. Judging criteria for the annual award includes energy efficiency, cost effectiveness, innovation and breadth of application.

The energy management program officially began at Brunswick Smelting and Fertilizer in 1982. The first step was an energy audit which identified areas of high consumption and cost. As Energy Management Co-ordinator, Jean-Gilles Girard explained, it took the energy shortage and oil embargoes of the 1970's to shock North America into action. "Energy was not looked at as being a factor of

production; but in our case at Brunswick Smelting and Fertilizer, energy is 30 per cent of the total operating costs."

Approximately \$20 million each year is budgeted for energy, which includes electricity, industrial coke, Bunker C oil, No. 2 oil, propane and other minor fuels. Most electrical energy at the smelter and fertilizer plant is consumed by electric motors, which range in size from 1/20 horsepower to 2500 hp. There are 148 motors of 20 hp. or more, many of which run conveyor systems, crushers and water pumps.

Though most improvements require an expense on new machinery and process changes, the benefits soon follow. For example, the installation of new burners on the zinc retort furnaces (which remove zinc from the lead-silver mixture) involved a capital cost of \$15,000. This cost was recovered three and one-half weeks after the conversion, with annual savings of \$220,000. The new burners also contribute to improved working conditions through cleaner, safer and quieter operations.

The process change to hemi-hydrate at the fertilizer plant cost approximately \$3.8 million and eliminated the need for oil-operated steam evaporators. The conversion will allow a savings of \$1.75 million per year, with an estimated pay-back period of 2.2 years.

A revision of daily plant operations can also make immediate improvements. Mr. Girard explained that a reduction of fuel consumption in one area was made possible by simply loading the furnace

differently. "Energy management involves more than equipment modernization. The importance of other factors such as equipment maintenance and operating procedures must be recognized." Substantial cost reductions and improvements in the work environment ensure that these efforts will continue.



From left, Wallace S. Read, President of the Canadian Electrical Association; Frank MacLoon, an official of N.B. Power; Mike Street, General Manager, Smelting and Fertilizer Division, Brunswick Mining and Smelting; and George Portelance, Director, General, Customer Services, Canadian Electrical Association are pictured with the 1987 Double E Award for industrial energy efficiency.

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